

## **APPENDIX A**

### **CTPS LICENSE PLATE SURVEY FOR FOXBOROUGH COMMUTER RAIL FEASIBILITY STUDY**

**MEMORANDUM**

**To:** Ron Morgan, Joe Cosgrove  
David Nelson, Anne Galbraith, Adam Streit

**From:** Scott Peterson, Bruce Kaplan, and Ben Dowling  
Central Transportation Planning Staff

**Re:** Central Transportation Planning Staff License Plate Survey for Foxborough  
Commuter Rail Station Feasibility Study

**January 4, 2010**

**INTRODUCTION**

For the Foxborough commuter rail station feasibility study, the Central Transportation Planning Staff (CTPS) conducted a license plate survey of existing commuter rail park and ride lots in the vicinity of the Town of Foxborough in November of 2009. This analysis provides a better understanding of the existing drive-access transit market in the study areas, as well as the potential drive-access markets for a future commuter rail station in Foxborough.

The core drive-access market area for a potential Foxborough commuter rail station would likely include the towns of Foxborough itself, Wrentham, Plainville and North Attleborough. These towns would likely fall into the market area for a new Foxborough park and ride lot due to their proximity to and transportation accessibility to the proposed new Foxborough commuter rail station, adjacent to Gillette Stadium.

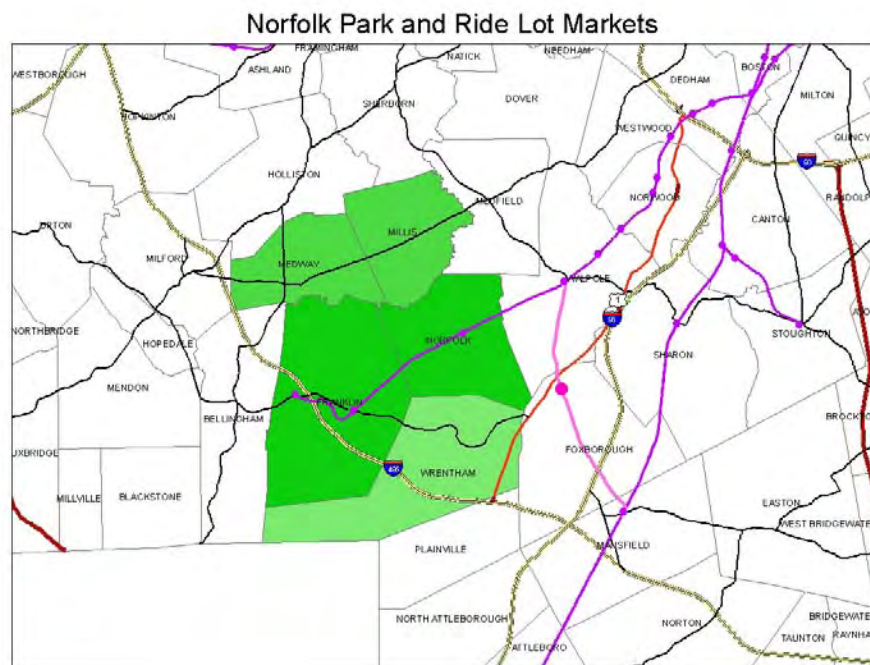
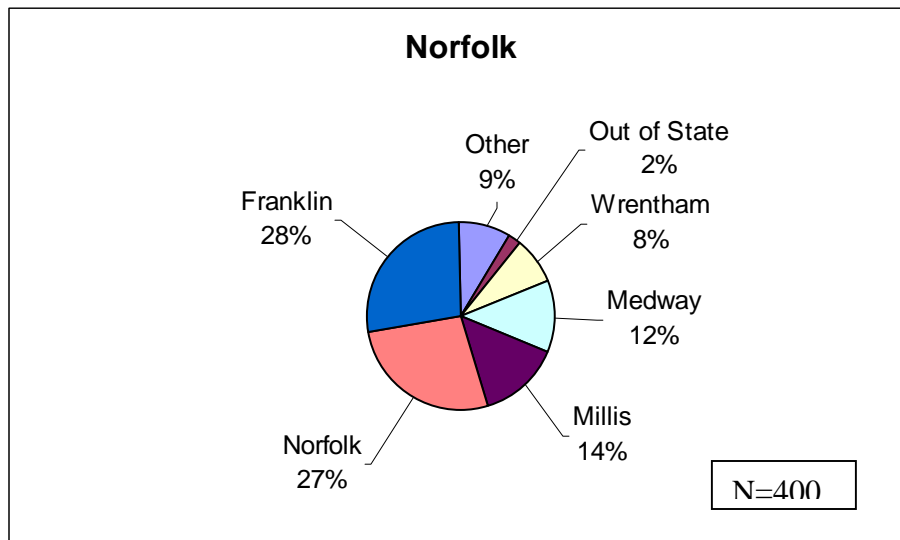
To a lesser extent, the market area for a new commuter rail park and ride lot in Foxborough may also include the neighboring towns of Mansfield, Norfolk, Walpole and Sharon. Despite having ready transportation access to both Foxborough and Gillette Stadium, these towns will likely only play a secondary role in the market area for a new Foxborough park and ride lot because these towns already have both commuter rail stations and park and ride lots of their own.

**Park and Ride Lots Surveyed**

For this study, CTPS surveyed six park and ride lots—two on the Franklin commuter rail line (Norfolk and Walpole) and four on the Providence commuter rail line (Mansfield, Sharon, Canton Junction and Route 128). Norfolk, Walpole, Mansfield and Sharon facilities were surveyed because they lie in towns neighboring Foxborough. Canton Junction and Route 128 lots were included in the survey because their ready access to Interstate 95 provides for an extremely wide-ranging market area, including the geography to be served by the proposed Foxborough commuter rail station.

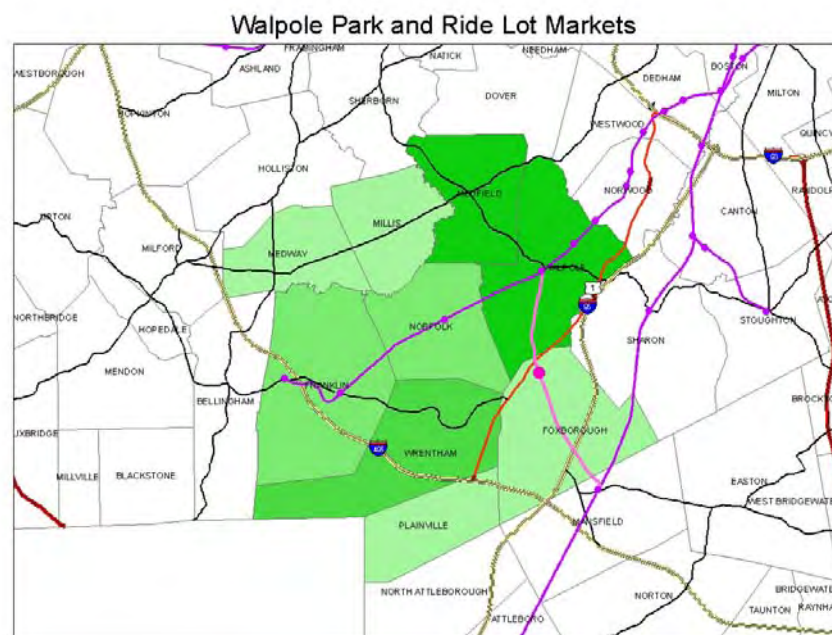
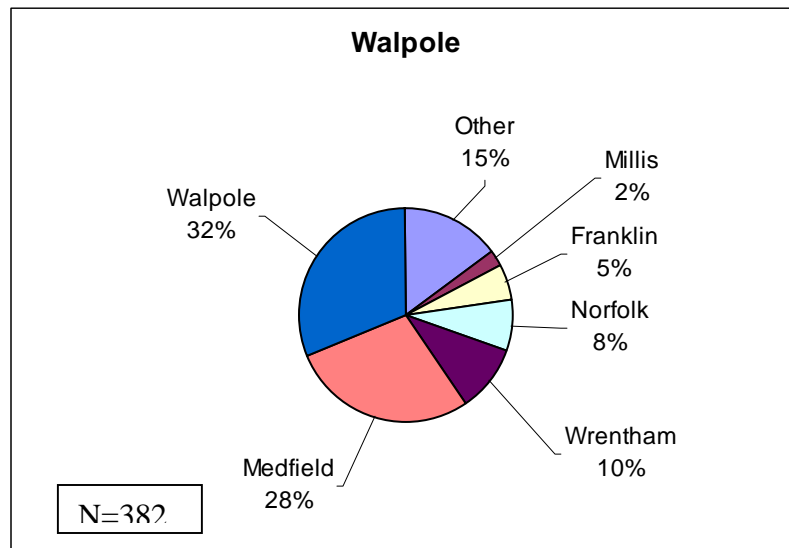
## Norfolk

The Norfolk commuter rail station park and ride facilities include three primary lots, with a total capacity of 532 spaces. When the license plate survey was conducted, 400 of these spaces were filled. The collected data show the two largest markets using Norfolk to be the towns of Franklin and Norfolk, with 112 cars surveyed registered in Franklin and 108 registered in Norfolk. Of the likely core Foxborough markets, the highest usage of the Norfolk facilities is from Wrentham (32 cars), with lesser usage from Plainville (four cars), and no usage from either Foxborough or North Attleborough.



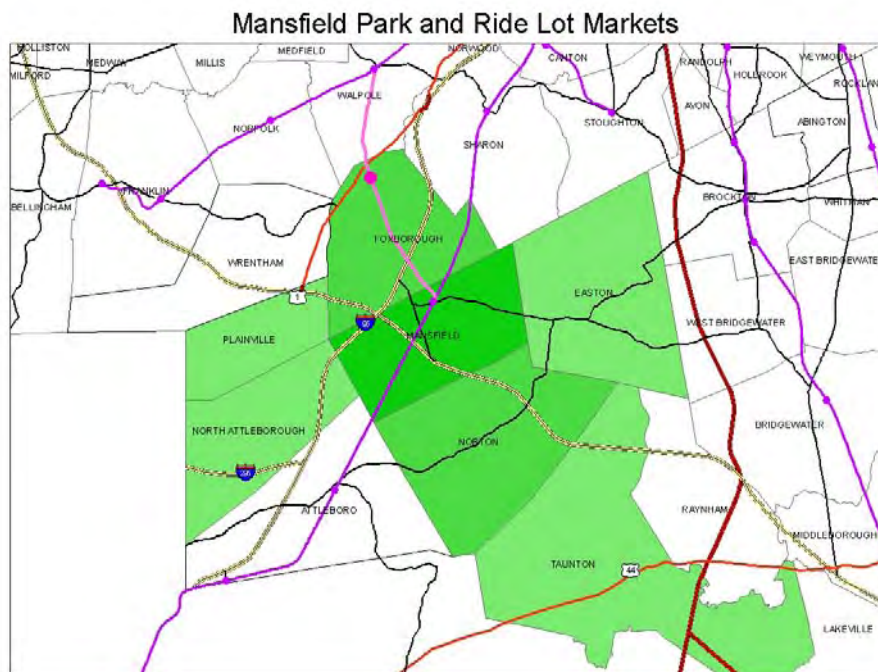
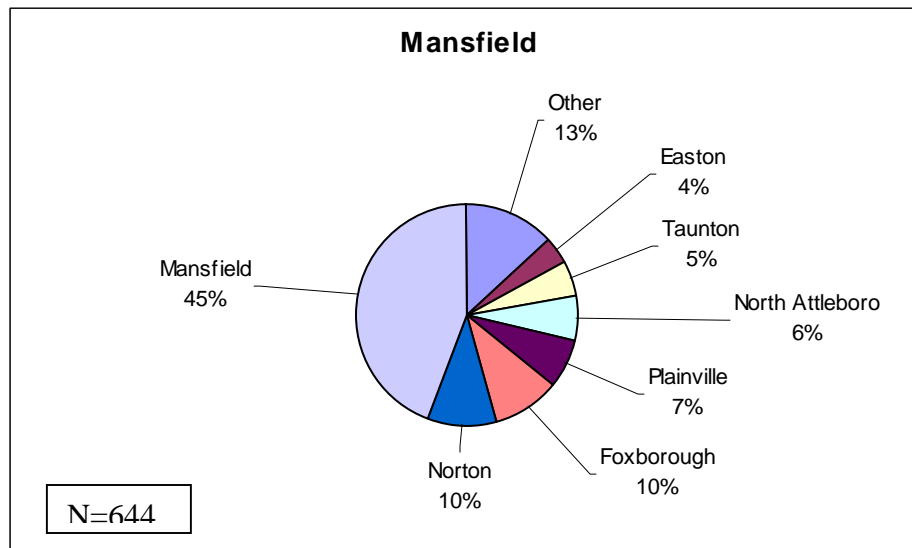
## Walpole

There are several commuter rail parking lots, including a large private lot, associated with the Walpole commuter rail station. Altogether these lots have a total capacity of approximately 500 spaces. When the license plate survey was conducted, 382 of these spaces were filled. The largest market for the Walpole parking lots is Walpole itself, with 122 cars surveyed registered in Walpole. Of the likely core Foxborough market areas, Wrentham is the largest (38 registered cars), Foxborough and Plainville are considerably smaller (6 registered cars each), and North Attleborough is nonexistent.



## Mansfield

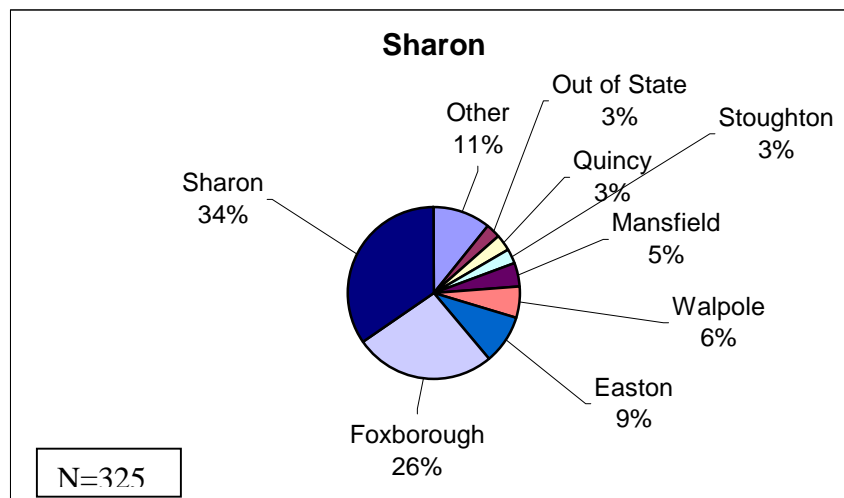
Mansfield has several areas available for commuter rail parking, some of which are dedicated for Mansfield residents only. Altogether, these areas have a total capacity of approximately 850 spaces. When the license plate survey was conducted, 644 of these spaces were filled. The collected data reveals that by far, the largest market for the Mansfield lots is Mansfield itself, with 290 surveyed cars registered in Mansfield. Of the core Foxborough market communities, there were 64 registered cars from Foxborough, 45 from Plainville, 39 from North Attleborough and two from Wrentham.





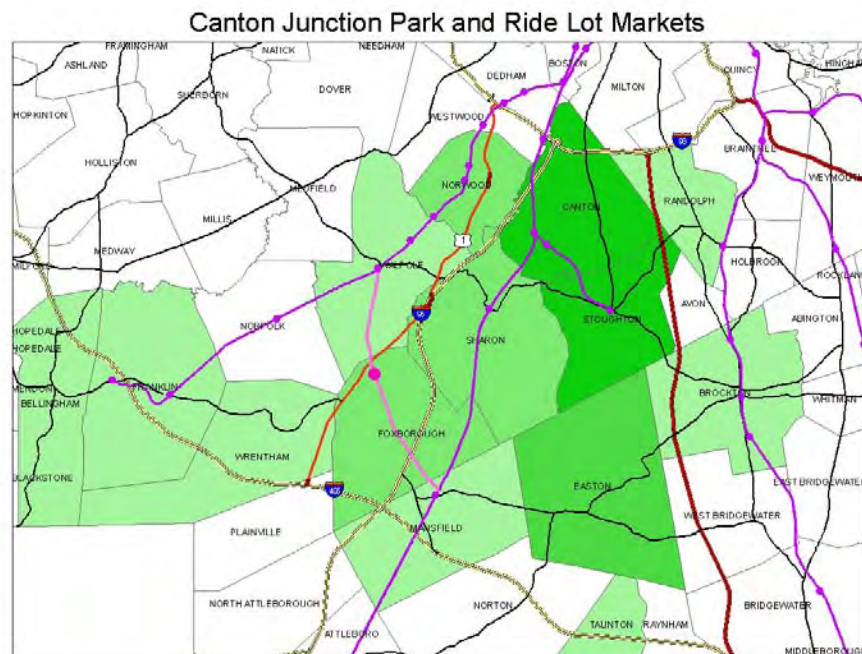
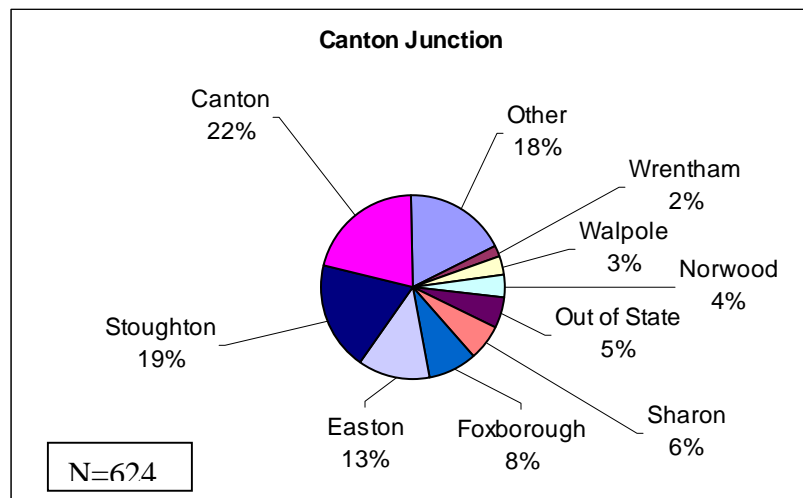
## Sharon

The Sharon park and ride facility is located adjacent to the Sharon commuter rail station. Lots, connected by a bridge, are situated on both sides of the tracks. The facility has a total capacity of 542 spaces. When the license plate survey was conducted, 325 of these spaces were filled. The collected data reveals the largest market segment represented to be Sharon itself, with 110 surveyed cars registered in Sharon. Of the core Foxborough market areas, 85 cars were registered in Foxborough (the second largest market parking at Sharon), 3 were registered in Wrentham and one each were registered in Plainville and in North Attleborough.



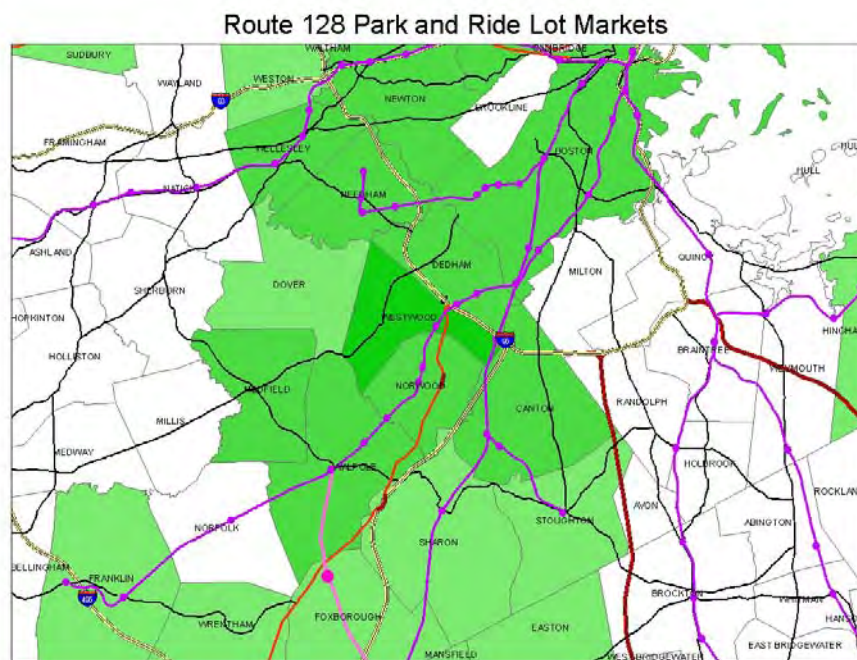
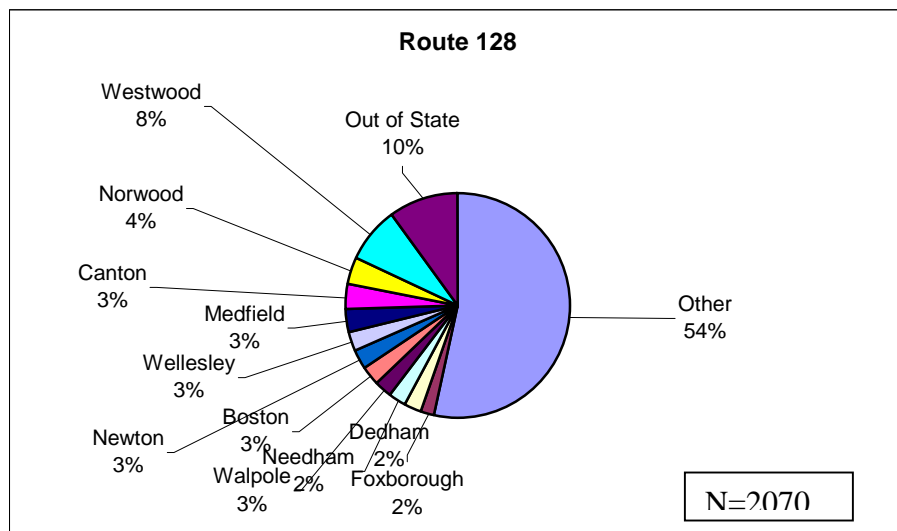
## Canton Junction

The Canton Junction park and ride lot straddles the train tracks at Canton Junction station and the lots are connected to each other by a steel pedestrian bridge. The park and ride facility has a total parking capacity of 764 spaces. On the day of the license plate survey, 624 of these spaces were filled. The largest market parking at Canton Junction is from Canton itself, with 137 surveyed cars registered in Canton. Of the core Foxborough market areas, 50 cars were registered in Foxborough (the fourth largest segment parking at Canton Junction), 12 were registered in Wrentham and 3 were registered in Plainville. No cars registered in North Attleborough were observed at the Canton Junction facility.



## Route 128

As a regional facility with a large parking garage (2,589 spaces), the Route 128 Station park and ride facility is somewhat unique among the park and ride facilities that were surveyed. Instead of having a small group of communities that comprise the majority of its drive-access market, many communities comprise small portions of this market. The town of Westwood represents the largest segment of the market, with 165 registered cars out of a total of 2,070 surveyed. On the day of the survey, 41 cars parked at the Route 128 facility were registered in the Town of Foxborough. The towns of North Attleborough, Wrentham and Plainville had 13, 10 and 7 cars park at Route 128 respectively.

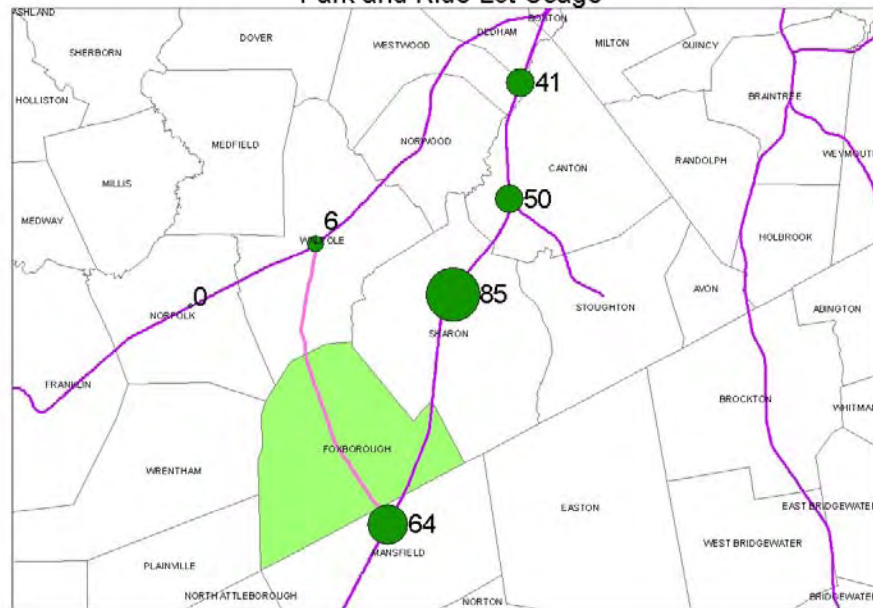




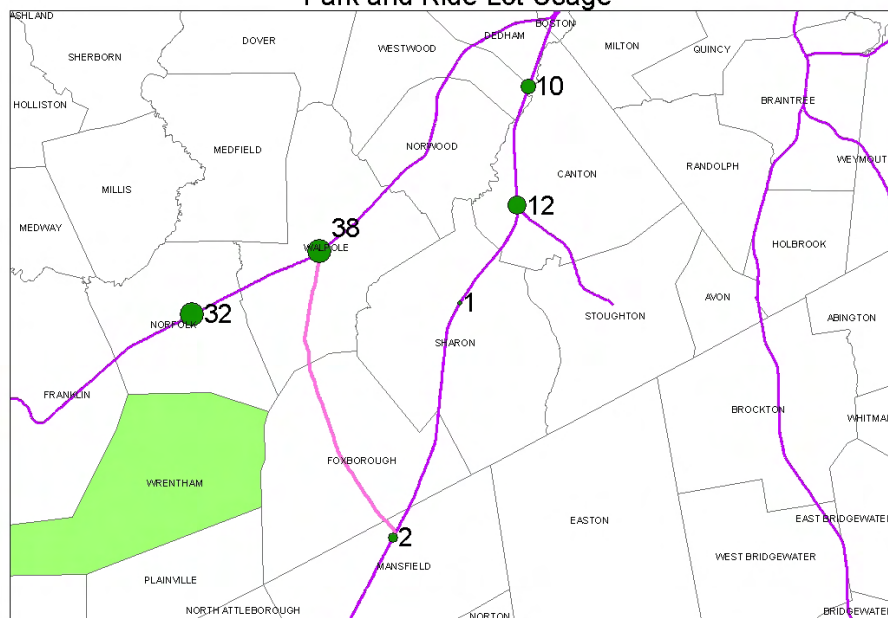
## Existing Core Market Area Drive Access Usage

The following maps show the distribution of cars across the six park and ride lots included in the license plate survey that were respectively registered in the Towns of Foxborough, Wrentham, Plainville and North Attleborough.

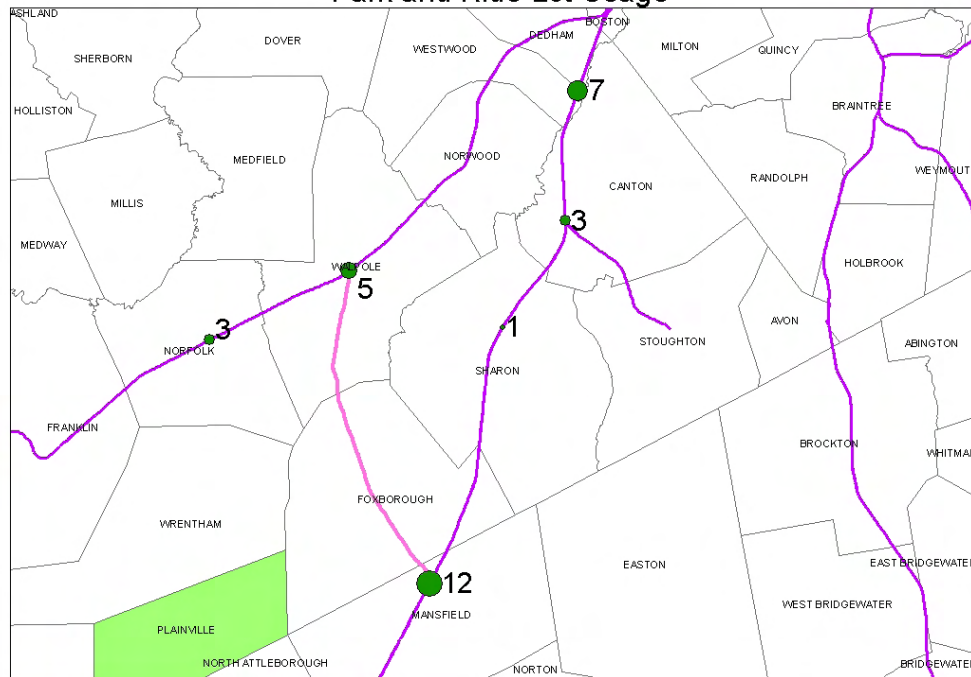
**Town of Foxborough Drive Access Commuter Rail and Park and Ride Lot Usage**



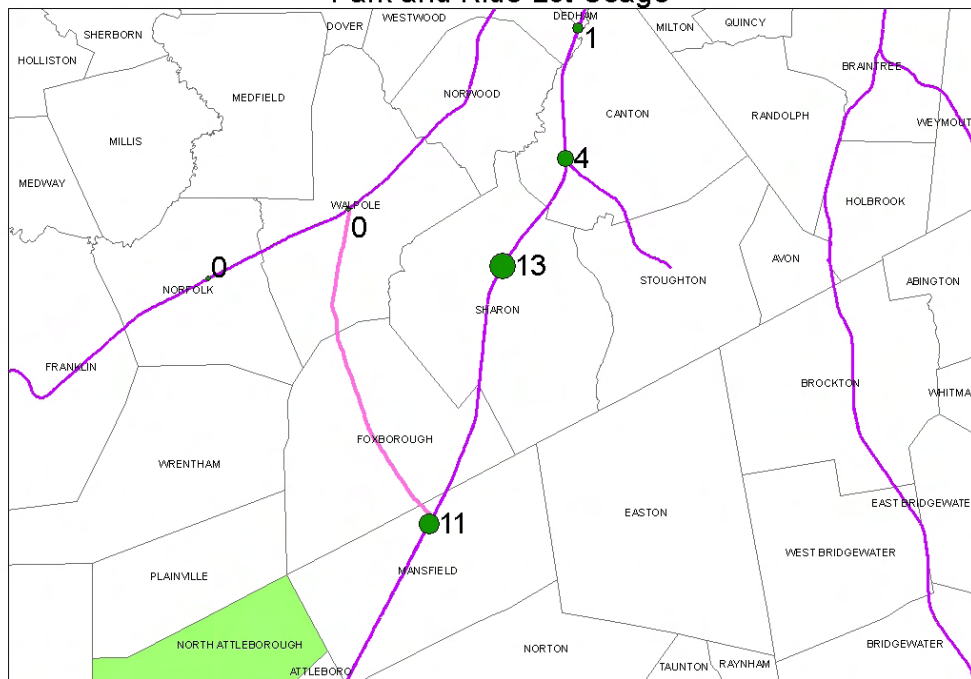
**Town of Wrentham Drive Access Commuter Rail and Park and Ride Lot Usage**



### Town of Plainville Drive Access Commuter Rail and Park and Ride Lot Usage



### Town of North Attleborough Drive Access Commuter Rail and Park and Ride Lot Usage



Further elaboration of existing regional park-and-ride travel patterns can be seen in the the following sets of tables. These display the distribution of local park-and-ride usage by the core and secondary market areas for the proposed Foxborough commuter rail station.

#### **Town of Foxborough Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	64	26%
Norfolk	0	0%
Walpole	6	2%
Sharon	85	35%
Canton Junction	50	20%
Rte 128	41	17%
Totals	246	100%

#### **Town of Wrentham Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	2	2%
Norfolk	32	34%
Walpole	38	40%
Sharon	1	1%
Canton Junction	12	13%
Rte 128	10	11%
Totals	95	100%

#### **Town of Plainville Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	12	39%
Norfolk	3	10%
Walpole	5	16%
Sharon	1	3%
Canton Junction	3	10%
Rte 128	7	23%
Totals	31	100%

**Town of North Attleborough Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	11	38%
Norfolk	0	0%
Walpole	0	0%
Sharon	13	45%
Canton Junction	4	14%
Rte 128	1	3%
Totals	29	100%

**Town of Mansfield Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	290	87%
Norfolk	0	0%
Walpole	0	0%
Sharon	16	5%
Canton Junction	0	0%
Rte 128	26	8%
Totals	332	100%

**Town of Norfolk Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	0	0%
Norfolk	108	70%
Walpole	31	20%
Sharon	0	0%
Canton Junction	2	1%
Rte 128	13	8%
Totals	154	100%

**Town of Sharon Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	0	0%
Norfolk	0	0%
Walpole	0	0%
Sharon	110	64%
Canton Junction	37	22%
Rte 128	25	15%
Totals	172	100%

**Town of Walpole Drive Access Commuter Rail Park and Ride Lot Usage**

<b>Park-and-Ride Destination</b>	<b>Cars</b>	<b>Percentage</b>
Mansfield	0	0%
Norfolk	3	1%
Walpole	122	54%
Sharon	20	9%
Canton Junction	19	8%
Rte 128	62	27%
Totals	226	100%

**CONCLUSION**

The existing drive-access usage patterns of the likely core market for a new Foxborough commuter rail station are useful and instructive for planning the Foxborough commuter rail station that has been proposed for the Gillette Stadium site. To varying degrees, a new Foxborough park and ride facility would attract drive-access demand from existing area park and ride facilities, but it is expected that most commuters will continue to primarily frequent existing park and ride facilities in their towns of origin. However, this regional pattern of local town origin parking lot usage would bode extremely well for commuters from the town of Foxborough, who currently comprise large percentages at many area commuter parking facilities. Other major market areas for a new commuter rail park and ride facility sited at Gillette Stadium could likely include the towns of Wrentham, Plainville and North Attleborough. It also appears that local commuters prefer to drive to park-and-ride facilities along the Providence line over the lots on the Franklin line. This is most likely results from the more frequent service as well as shorter run times to Boston offered on the Providence than the Franklin line. Exceptions do occur in communities located either directly along (Walpole, Norfolk) or adjacent to (Wrentham) the Franklin line.

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## **APPENDIX B**

### **PRELIMINARY SERVICE OPTIONS SCREENING**

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Jacobs developed 12 full-time service options for potential service to Foxborough Station. This Appendix: 1) Documents the proposed route options that could be used to offer commuter rail service to Foxborough; 2) Documents the pros and cons of each option, and 3) Recommends options to pursue for further study in offering fulltime service to Foxborough. Table B.1 lists the 12 options that could be used to offer fulltime service to Foxborough.

All options use the Framingham Secondary for travel between Foxborough and Walpole (Franklin Branch) or Mansfield (Northeast Corridor). It is assumed that the Framingham Secondary has been improved to allow for bi-directional operation at 60 mph. All options traveling via Walpole use the Franklin Branch between Walpole and Readville. Options that go to Boston via “Mansfield” interlocking use the Northeast Corridor (NEC) between “Mansfield” and “Transfer” interlockings. “Transfer” is located just south of Readville Station and provides trains with access between the NEC and the Dorchester Branch (DB). Unless otherwise stated, all service is standalone service.

Table B.1:  
**Potential Routing Options for Fulltime Foxborough Commuter Rail Service**

No.	Description	Pros	Cons	Recommendation
1	Service via NEC	<ul style="list-style-type: none"> <li>1) Uses Franklin Branch</li> <li>2) Uses NEC to service major destinations</li> <li>3) Minimal infrastructure upgrades</li> <li>4) Could mostly be run with existing equipment</li> </ul>	<ul style="list-style-type: none"> <li>1) Could require significant changes to Walpole Station and/or Norwood Central</li> <li>2) Possible new arrival/departure slots in Boston</li> <li>3) Need one add'l peak consist</li> </ul>	Warrants further consideration in conjunction with express Forge Park service
2	Service via DB	<ul style="list-style-type: none"> <li>1) Uses Franklin Branch</li> <li>2) Minimal upgrades</li> <li>3) Extend Fairmont service</li> <li>4) No new arrival/departure slots</li> <li>4) Could mostly be run with existing equipment</li> </ul>	<ul style="list-style-type: none"> <li>1) Could require significant changes to Walpole Station and/or Norwood Central</li> <li>2) Need one add'l peak consist</li> <li>3) Local Readville to S. Station service 4 minutes longer than local service via NEC</li> </ul>	Warrants further consideration in conjunction with express Forge Park service
3	Service via "Mansfield" and NEC without Changing Ends	<ul style="list-style-type: none"> <li>1) Uses NEC for service to Boston and major destinations.</li> <li>2) Quickest trip time of all standalone options.</li> <li>3) Could mostly be run with existing equipment</li> </ul>	<ul style="list-style-type: none"> <li>1) New ~1 mile connection to NEC.</li> <li>2) Possible new arrival/departure slots at South Station.</li> <li>3) Need one add'l peak consist.</li> <li>4) Bypasses Mansfield station</li> <li>5)</li> </ul>	No further consideration
3A	Service via "Mansfield" and NEC Changing Ends	<ul style="list-style-type: none"> <li>1) Uses NEC for service to Boston and major destinations.</li> <li>2) Could mostly be run with existing equipment</li> </ul>	<ul style="list-style-type: none"> <li>1) Change ends on NEC – conflicts with MBTA and Amtrak</li> <li>2) Possible significant upgrades to Mansfield Station</li> <li>3) Need one add'l peak consist.</li> <li>4) Possible new arrival/departure slots at South</li> </ul>	No further consideration

Table B.1:  
**Potential Routing Options for Fulltime Foxborough Commuter Rail Service**

No.	Description	Pros	Cons	Recommendation
			Station.	
4	Stand alone Service via "Mansfield" and DB <u>without</u> Changing Ends	1) Extend of Fairmont service 2) No new arrival/departure slots in Boston 3) Could mostly be run with existing equipment	1) New ~1 mile connection to NEC. 2) Need one add'l peak consist. 3) Local Readville to S. Station service 4 minutes longer than local service via NEC 4) Bypasses Mansfield station	No further consideration
4A	Service via "Mansfield" and DB Changing Ends	1) Could mostly be run with existing equipment	1) Change ends on NEC – conflicts with MBTA and Amtrak 2) Possible significant upgrades to Mansfield Station 3) Need one add'l peak consist	No further consideration
5	Franklin Express & Local Foxborough Service via NEC	1) Uses Franklin Branch 2) Faster service for passengers west of Walpole 3) Could mostly be run with existing equipment 4) Uses NEC for service to Boston and major destinations.	1) Could require significant changes to Walpole Station and/or Norwood Central 2) Possible new arrival/departure slots in Boston 3) Need one add'l peak consist	Warrants further consideration
6	<i>Franklin Express &amp; Local Foxborough Service via DB</i>	<i>1) Uses Franklin Branch 2) Faster service for passengers west of Walpole 3) Extend Dorchester Branch service. 4) Could mostly be run with existing equipment</i>	<i>1) Could require significant changes to Walpole Station and/or Norwood Central 2) Possible new arrival/departure slots in Boston 3) Need one add'l peak consist 4) Foxborough service uses DB.</i>	<i>Warrants further consideration</i>
7	Foxborough via Providence Line (using NEC)	1) Franklin service remains essentially the same 2) Providence service thru Foxborough 3) No new layover facility required.	1) Each Providence trip is 17% longer than existing Providence service 2) Bypass some of heaviest stations in system 3) New service for Sharon	No further consideration
8	Foxborough via Providence Line (using DB)	1) Franklin service remains essentially the same 2) Providence service thru Foxborough 3) No new layover facility required. 4) Possibly no new arrival departure slots required at S. Station.	1) Uses Dorchester Branch 2) Each Providence trip is 23% longer than existing Providence service 3) Bypass some of heaviest stations in system 4) New service for Sharon	No further consideration
9	Foxborough - Walpole Shuttle	1) Service to Boston 2) Easy to implement	1) Requires transfer at Walpole and/or Norwood Central	Possible fallback option



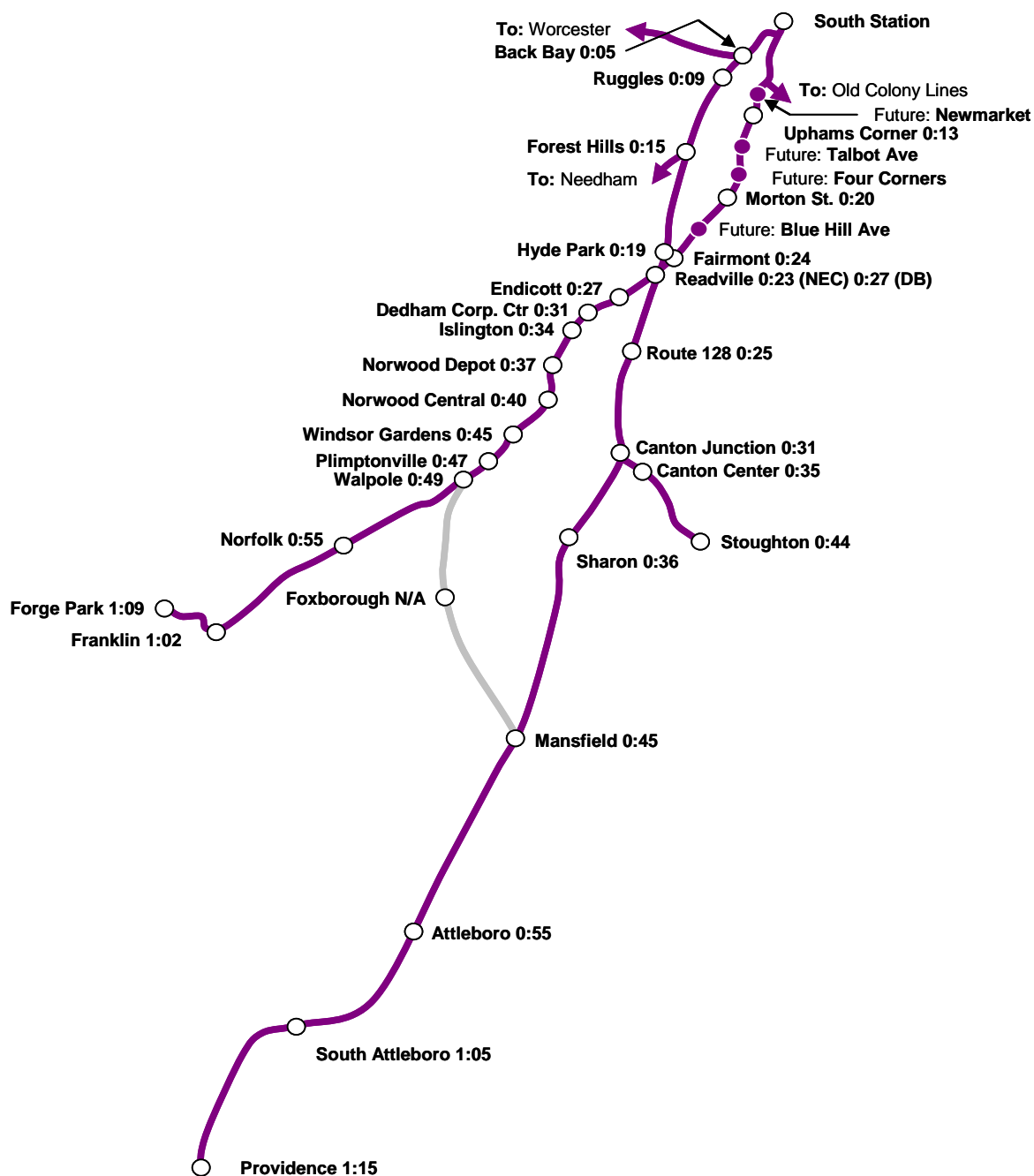
Table B.1:  
**Potential Routing Options for Fulltime Foxborough Commuter Rail Service**

No.	Description	Pros	Cons	Recommendation
		3) No add'l equipment needed 4) Low cost alternative 5) No impact on S. Station	2) Possible modifications to Walpole Station and/or Norwood Central	
10	Foxborough - Mansfield Shuttle	1) Service to Boston 2) Easy to implement 3) No add'l equipment needed 4) Low cost alternative 5) No impact on S. Station	1) Requires transfer at Mansfield 2) Possible modifications to Mansfield Station	Possible fallback option

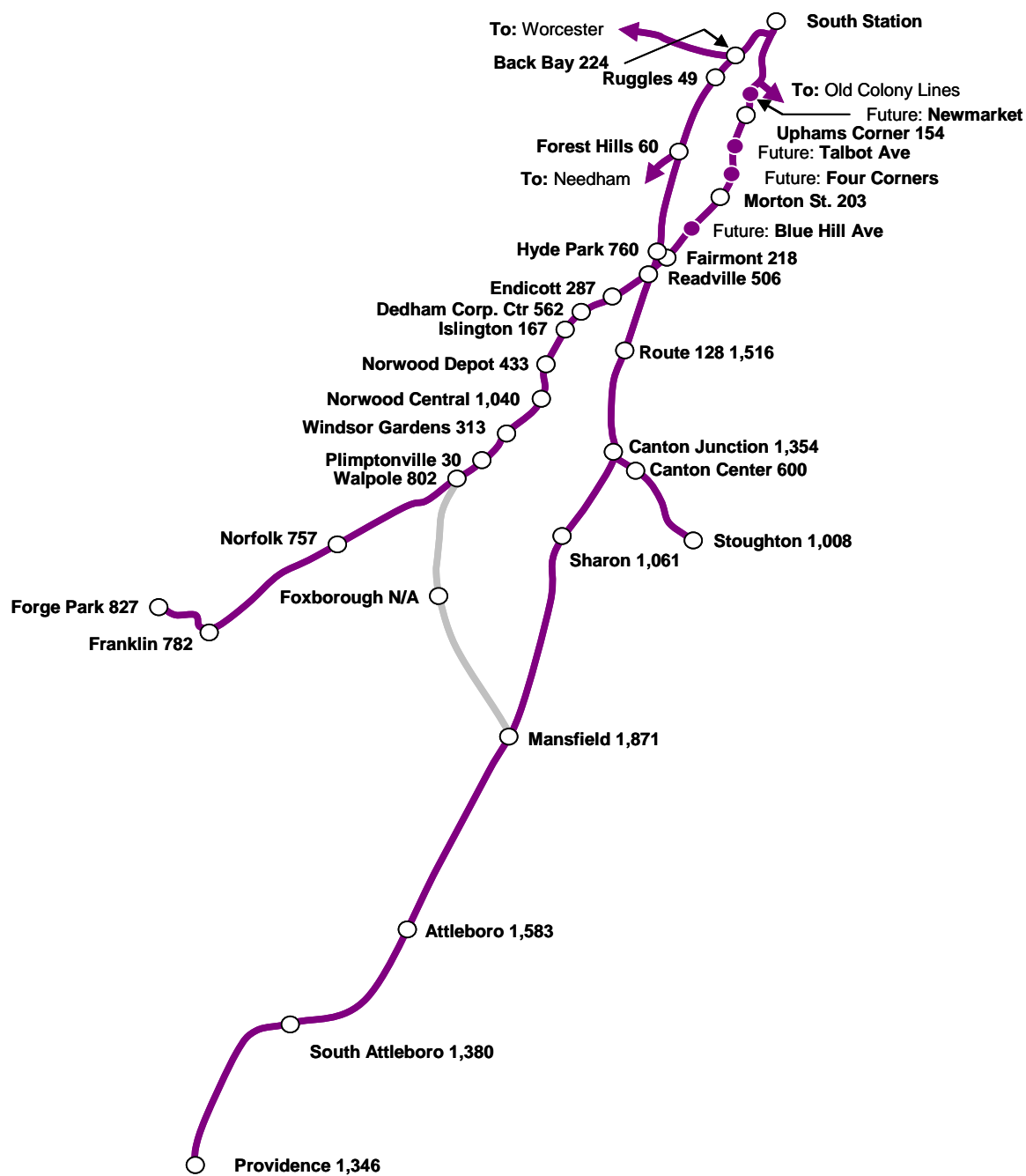
### **Trip Times**

The trip times for each option (including the baseline) are shown below in the figures below.

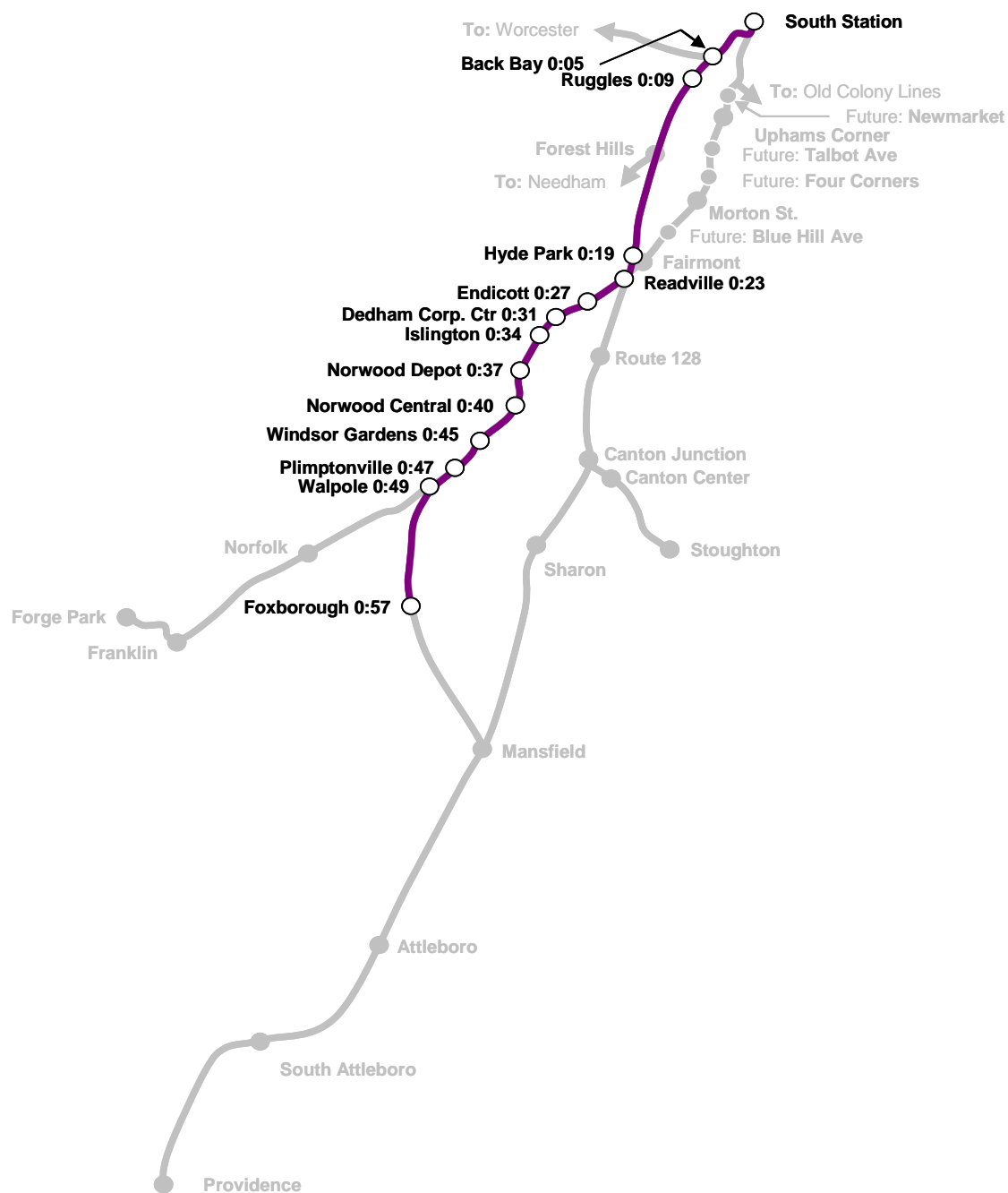
## Baseline Minutes to South Station (May 18, 2009 Schedules)



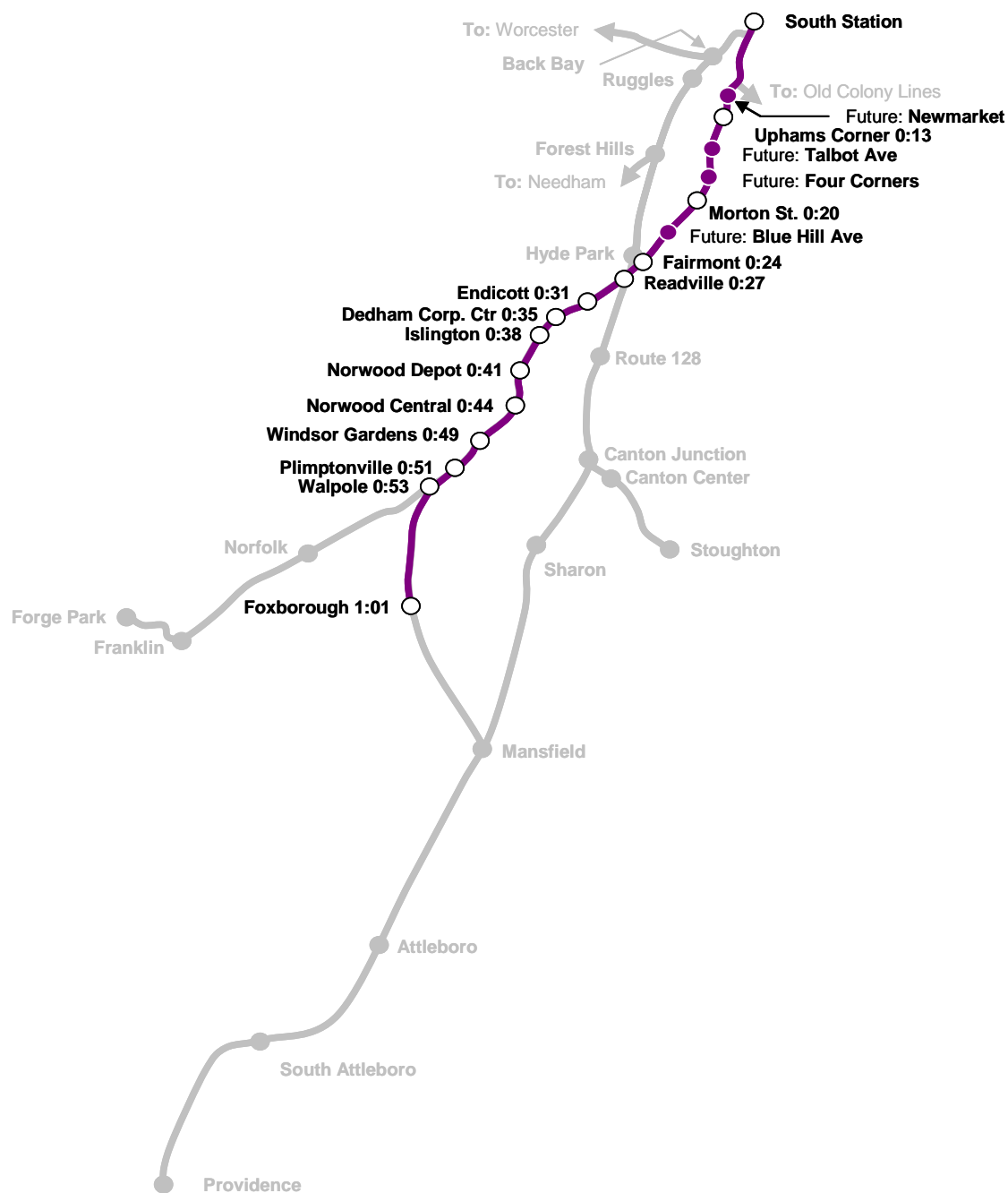
## Baseline Ridership to South Station (February 26, 2009 Audit)



## Option 1 – Local Service via the Northeast Corridor

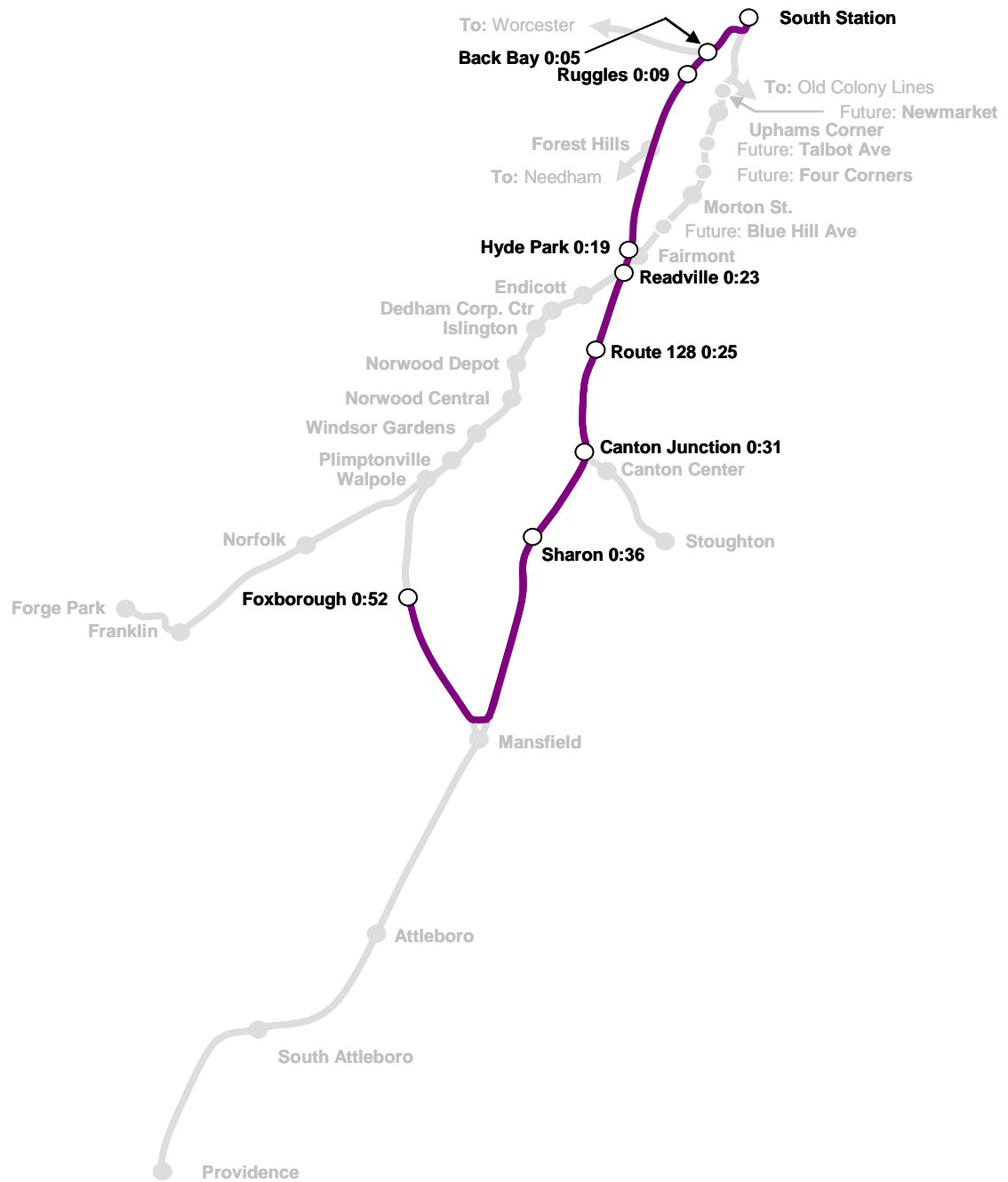


## Option 2 – Local Service via the Dorchester Branch

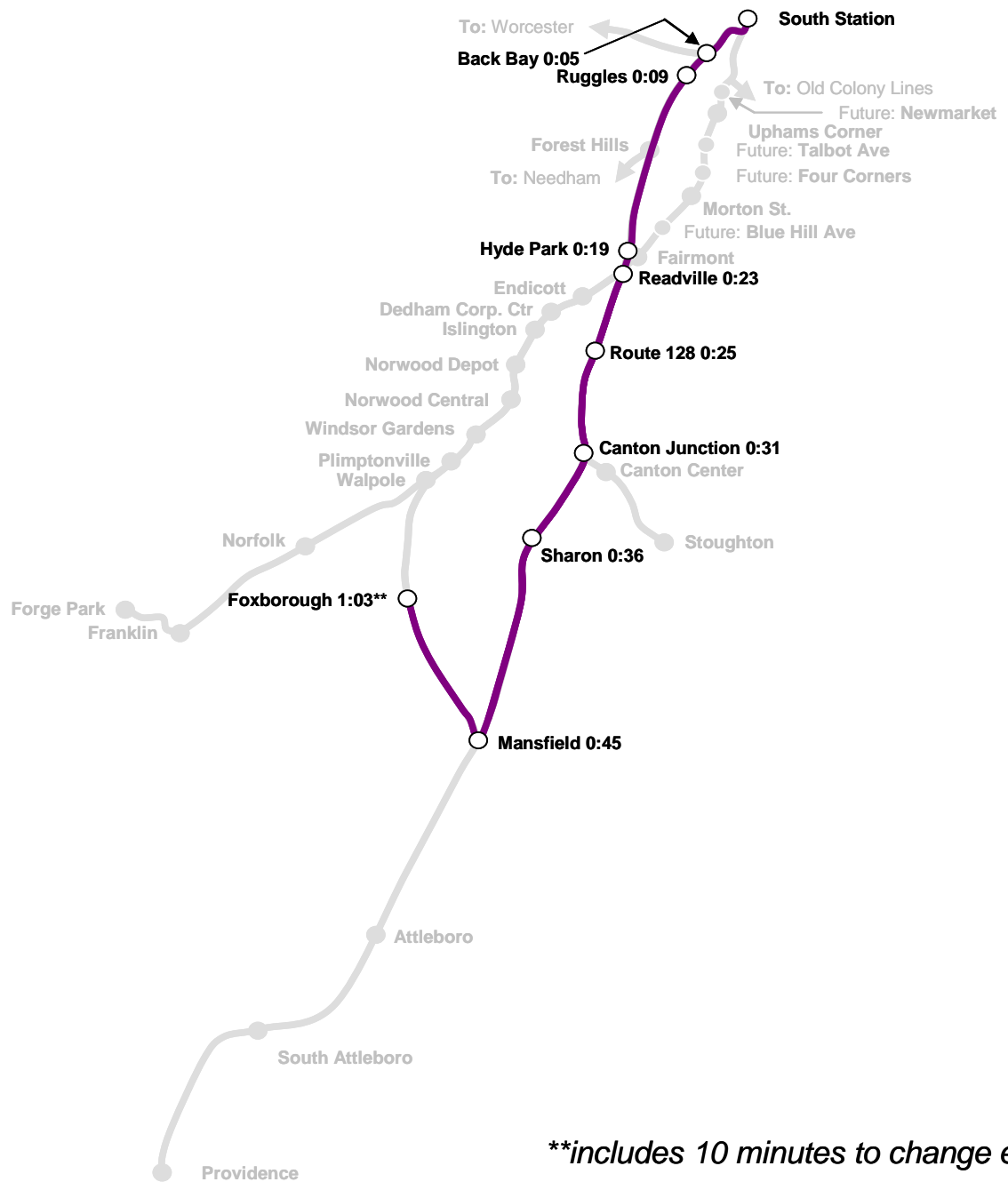




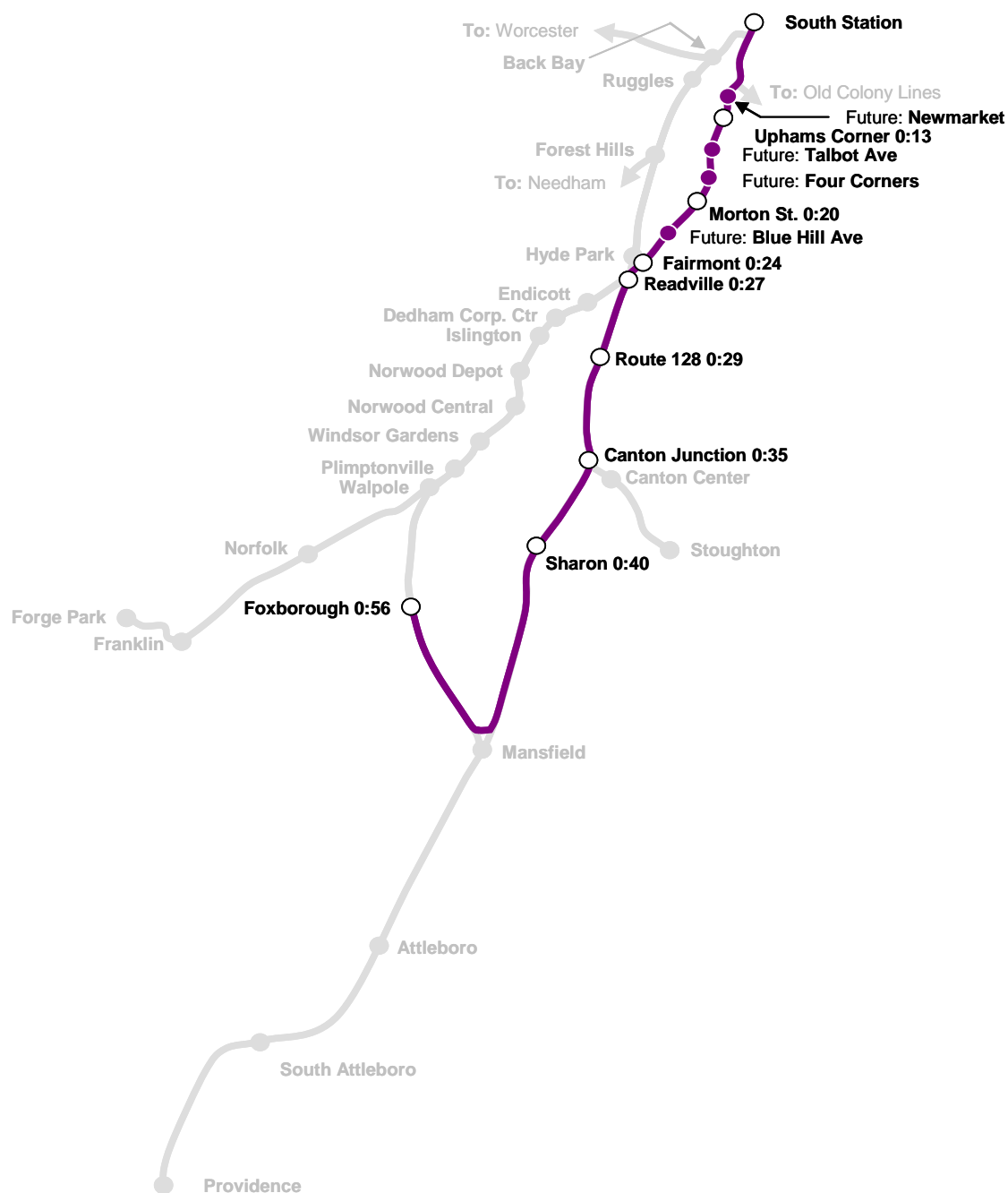
### Option 3 – Local Service via “Mansfield” and Northeast Corridor



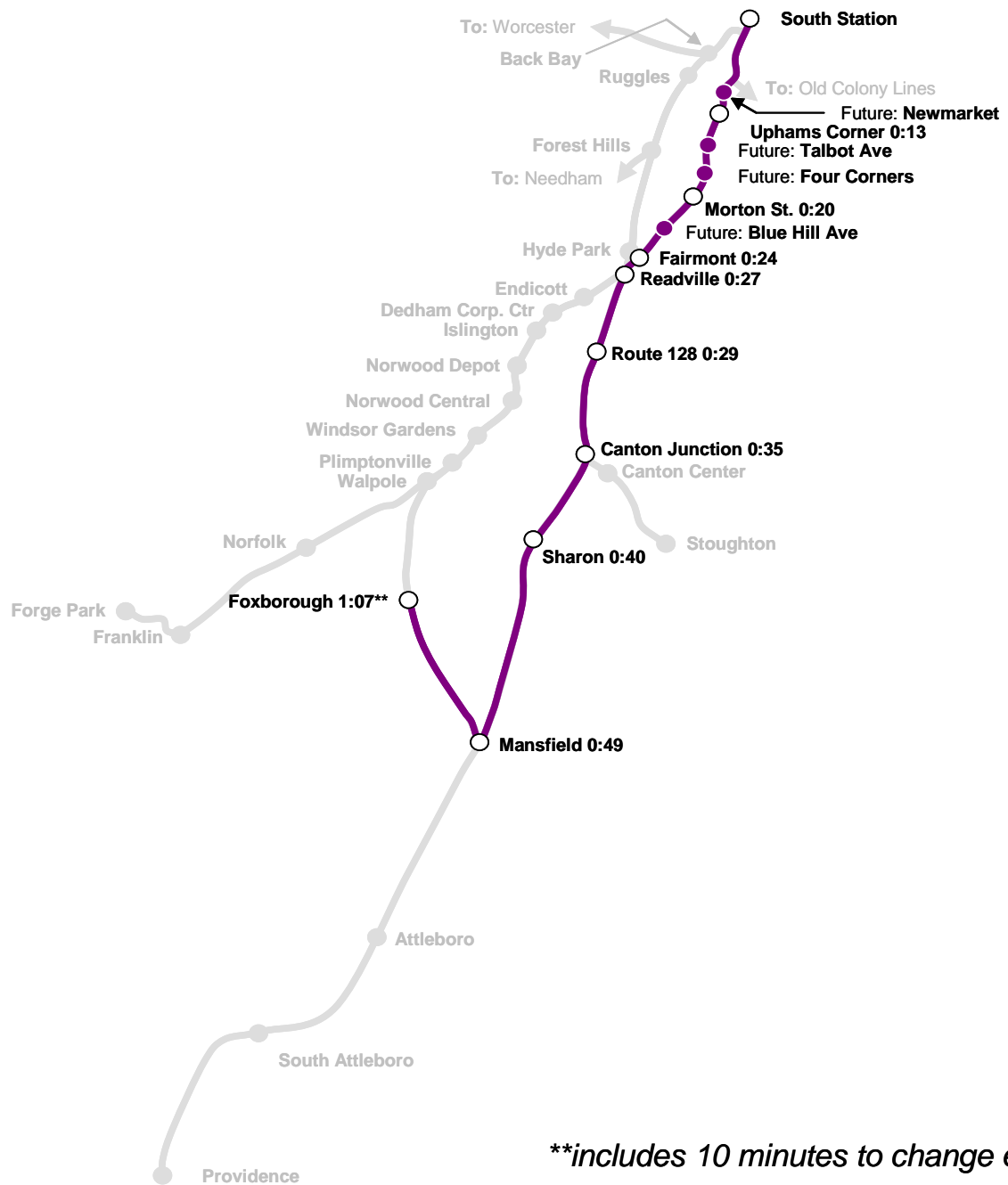
## Option 3A – Local Service via “Mansfield” and Northeast Corridor (Service to Mansfield Station)



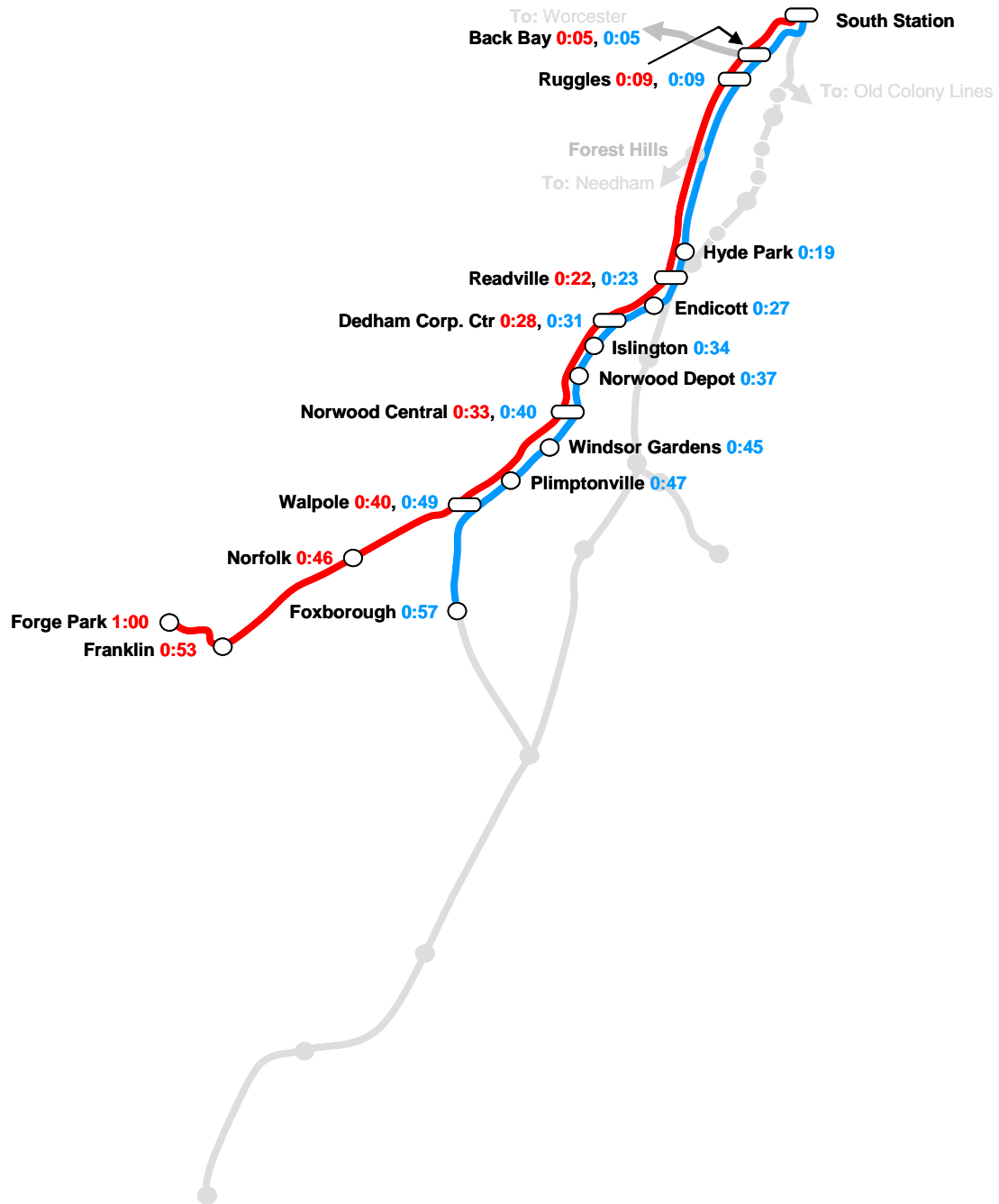
## Option 4 – Local Service via “Mansfield” and Dorchester Branch



**Option 4A – Local Service via “Mansfield” and Dorchester Branch (Service to Mansfield Station)**

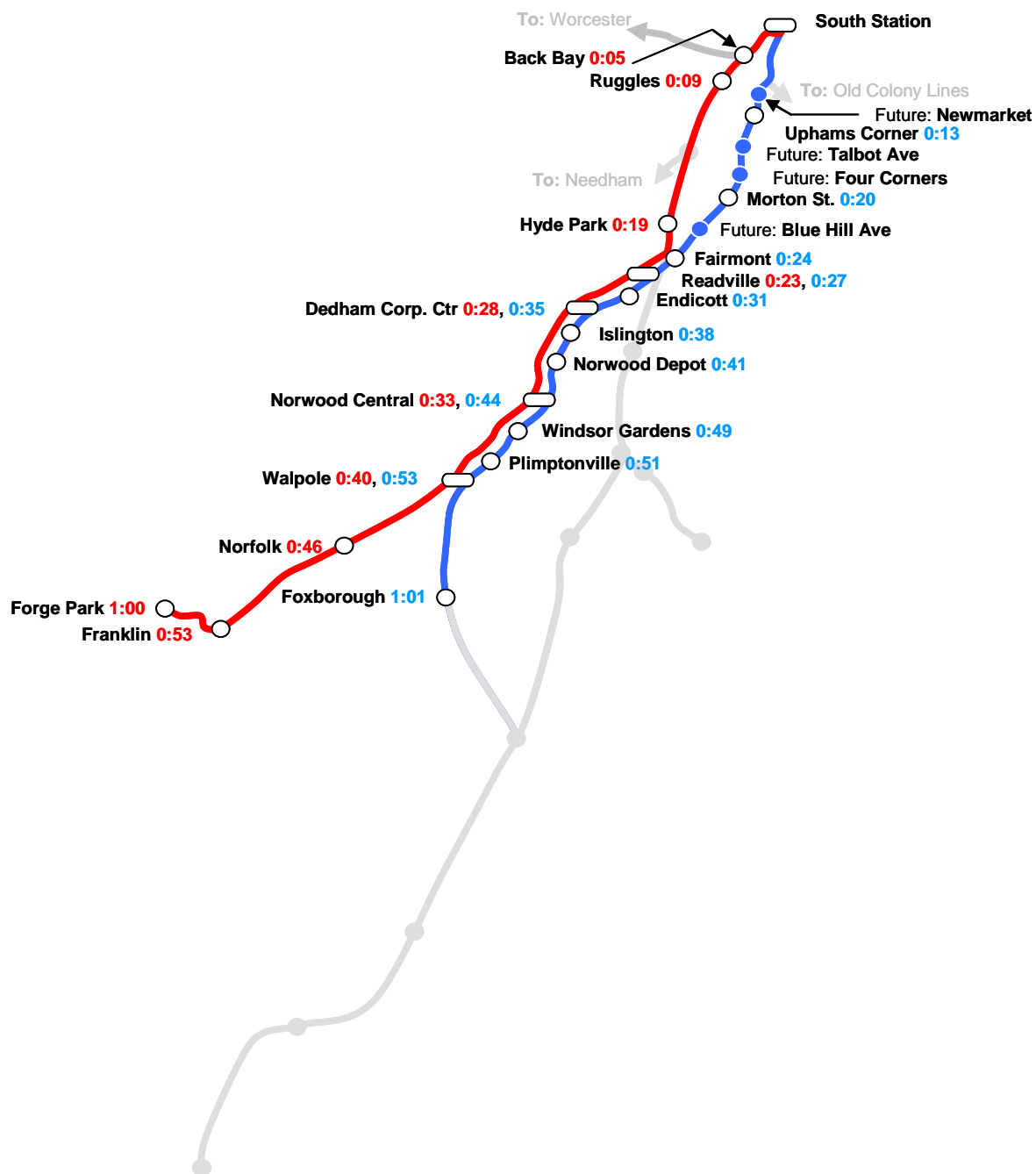


## Option 5 – Franklin/Foxborough Hybrid (via Northeast Corridor)

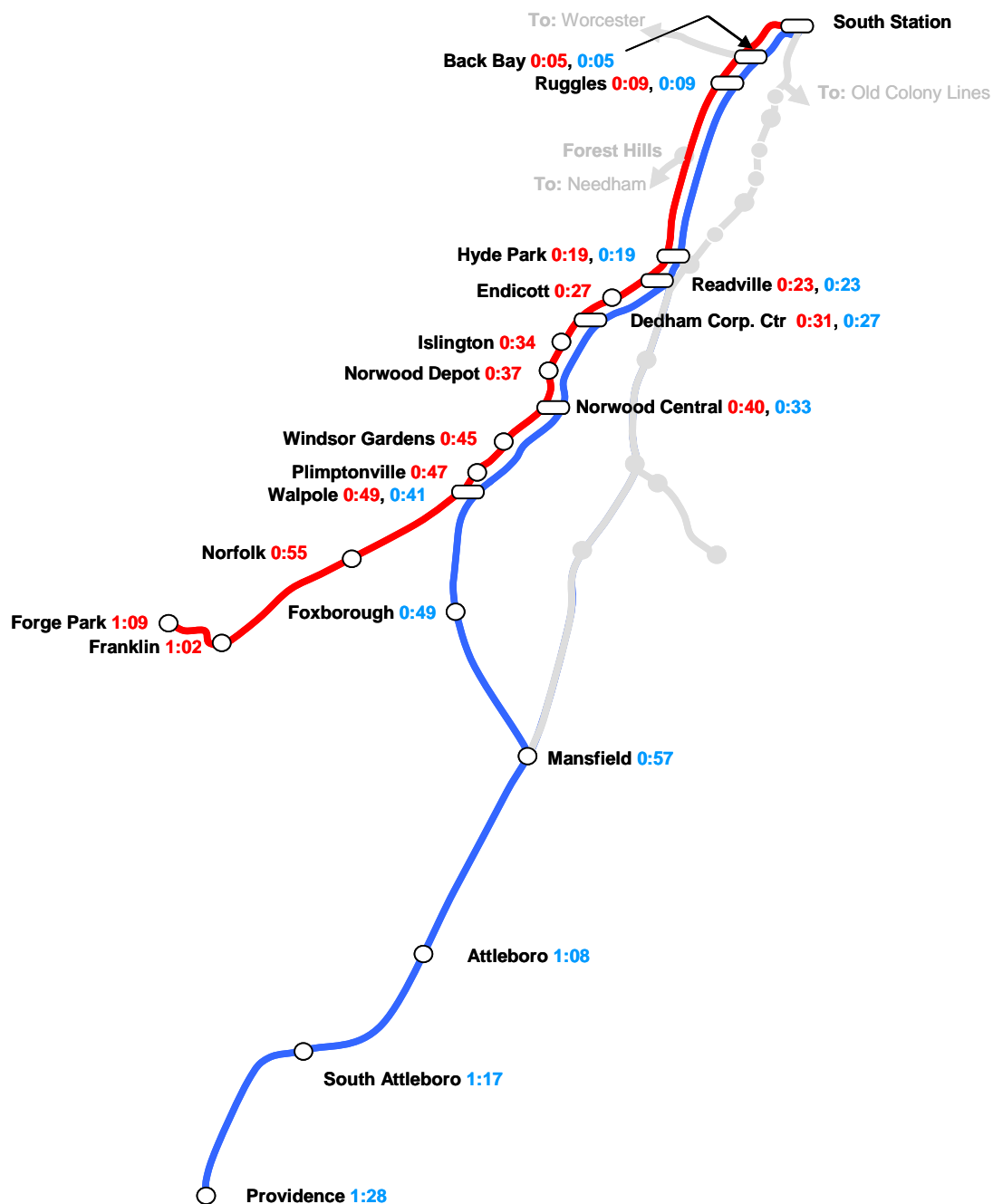




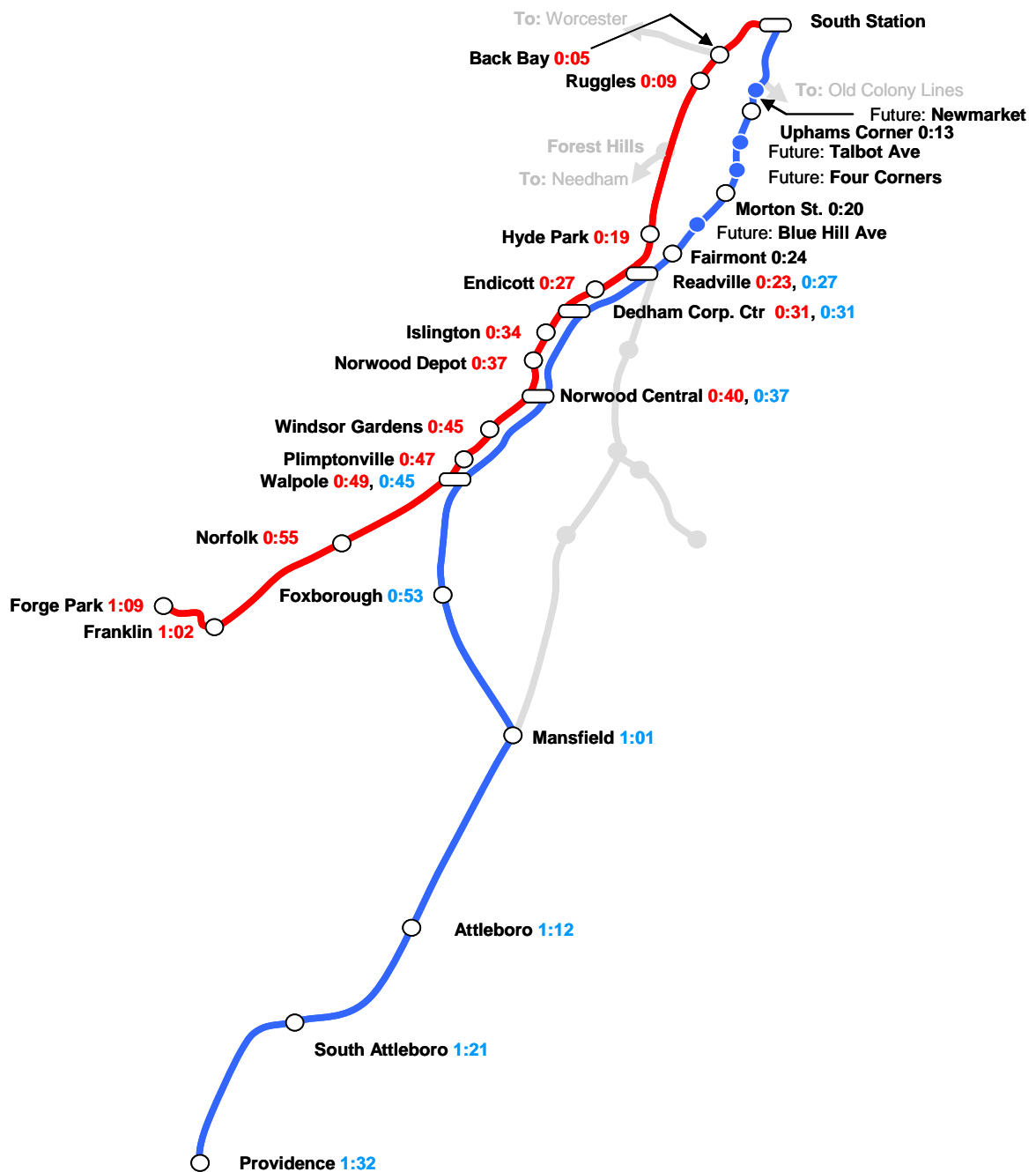
## Option 6 – Franklin/Foxborough Hybrid (via Dorchester Branch)



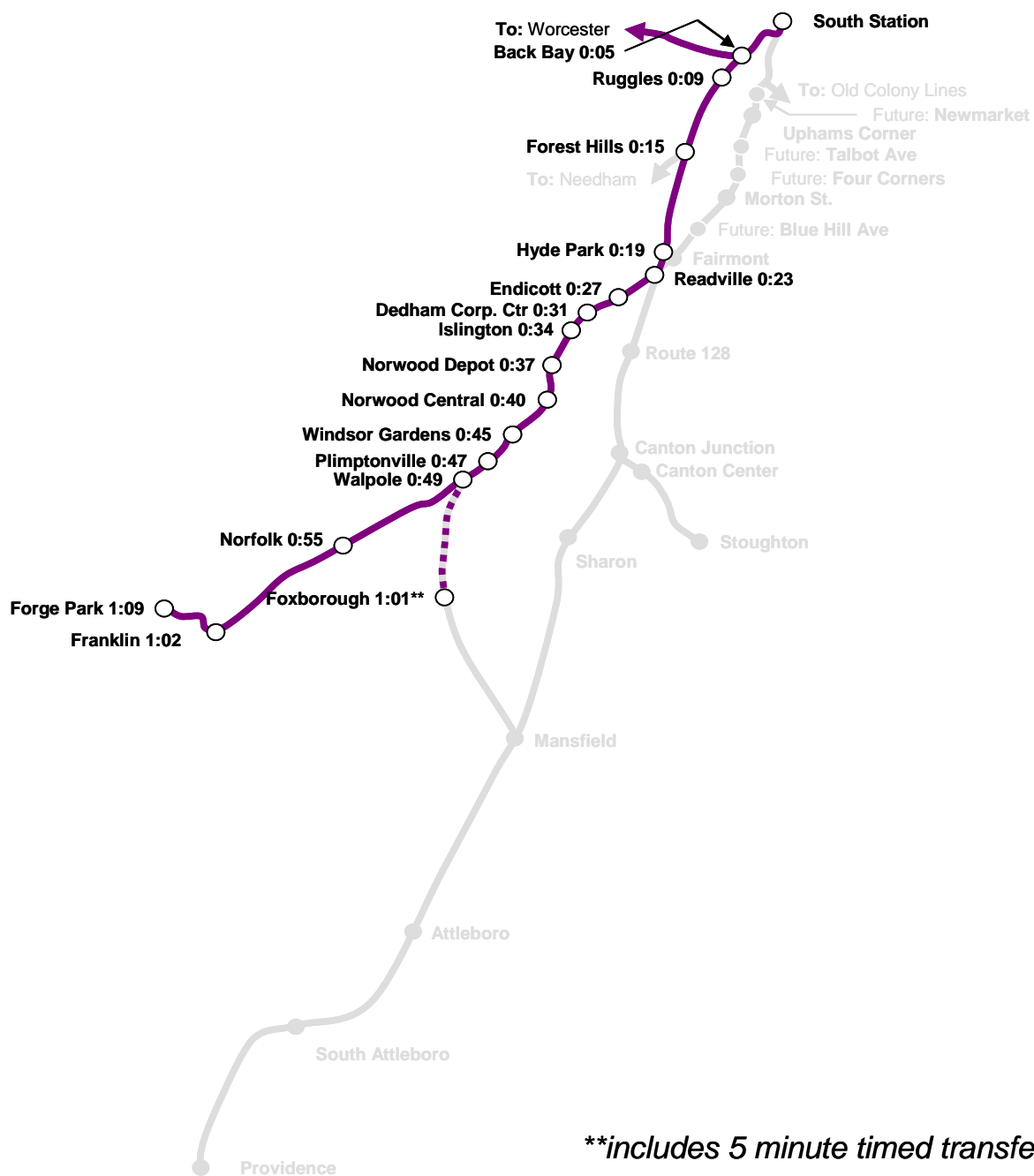
## Option 7 – Foxborough via Providence Line (using Northeast Corridor)



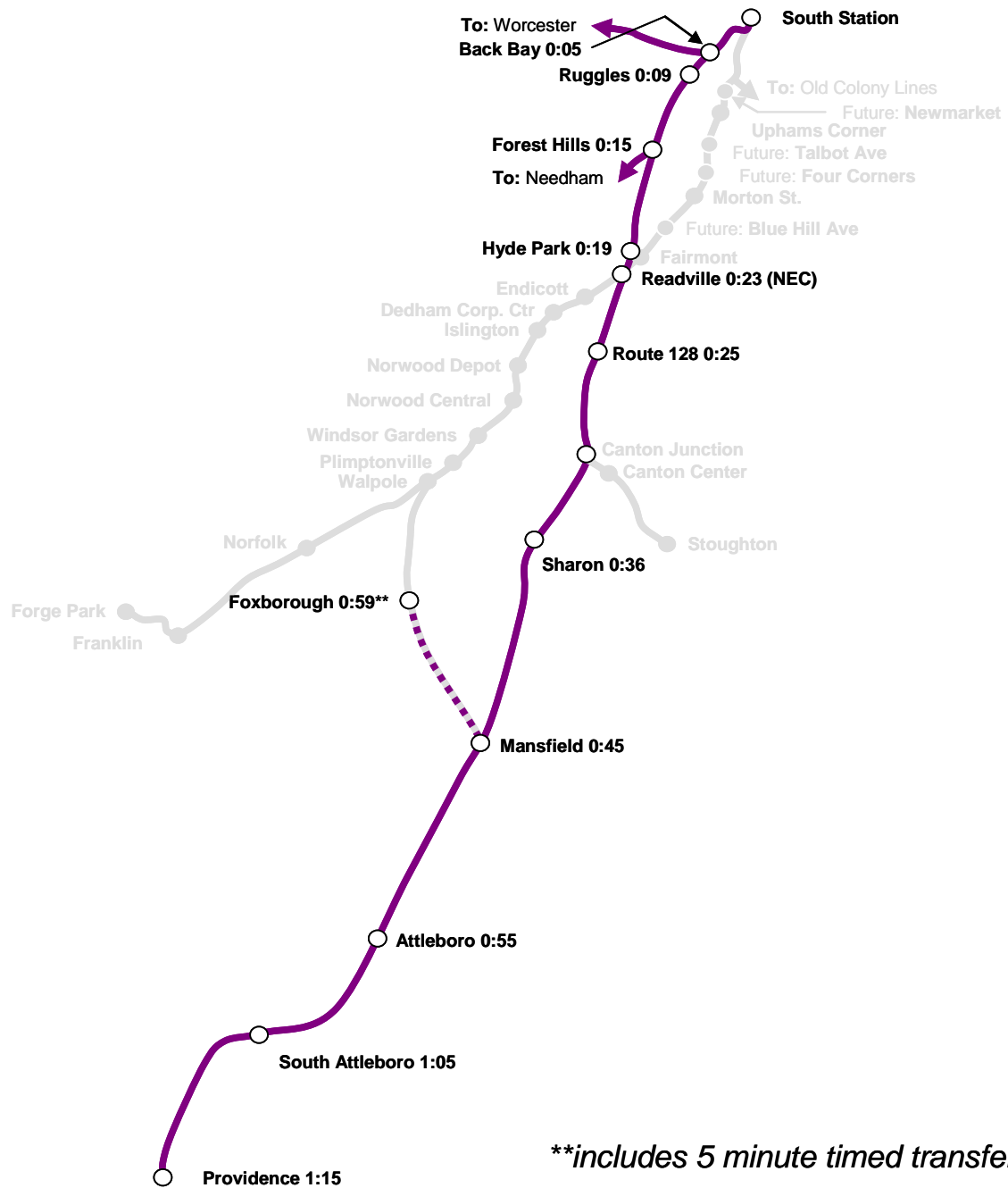
## Option 8 – Foxborough via Providence Line (using Dorchester Branch)



## Option 9 – Walpole Shuttle



## Option 10 – Mansfield Shuttle



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